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☞See Advertisement on last page.

POETRY.

THE WEATHER AND THE CROPS.

WARMED into life by sunny showers,
The forest trees their buds unfold;
The meadows gleam with cuckoo flowers,
And bright marsh-marigold:
And the daisy springeth up
With the sister buttercup.

On hyacinth and cowslip wild
Feeds daintily the honey-bee;
In thicket and in grove the child
Plucks the anemone:
Bloom and verdure everywhere
Cheer the eye with pictures fair.

'Mid all that's beautiful and bright
Around us, not a vision sweet
Can match that truly charming sight,
The growing crop of Wheat:
Talk not of the flowery dell!
Wheat, my bucks, is looking well.

Fair is thy prospect, blooming May!
This rather late but lovely Spring;
Fairer the prospects of the hay—
A more important thing:
How the mangel-
Never mind the opening rose.

The young and tender turnips see—
(Oh! how delicious are their greens!)—
They are as healthy as can be:
Behold yon thriving beans,
Field of clover, oats, and peas,
What are spangled meads to these?

The money market may be tight;
But, gazing Nature's beauties o'er,
I feel that all will soon be right;
The rate of discount lower;
Coupled with improving rents,
Scrip, bank stock, and three per cents.

The fond conjecture I will risk
That business will again, ere long,
Become, like vegetation, brisk,
Or yonder skylark's song;
And my hope has found these props
In the weather and the crops.

LOOK FORWARD.

One year the nearer, wife,
Are we to death,
Time, love, that meteth life,
Garners our breath.

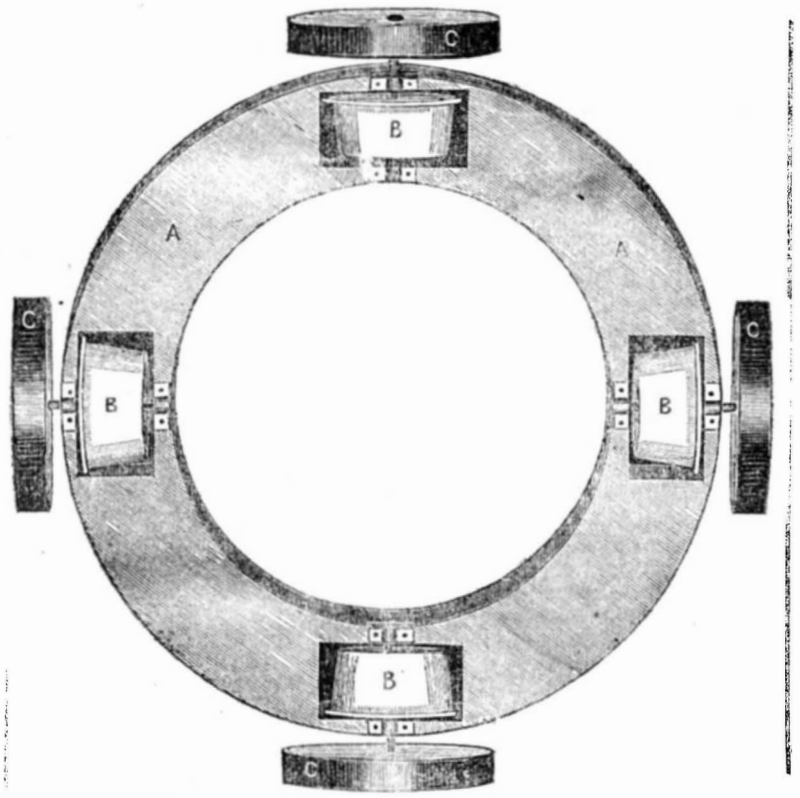
Let not thy dear face own
Looks of distress;
If days of love are gone,
Sorrows are less.

Look forward cheerily—
Hope to the last!
Wouldst thou live wearily?
Cling to the past.

Half or Three-Quarters.

A very small man, who is blessed with a very large wife, that instead of looking up to him with admiration, is in the habit of looking down upon him with something akin to contempt, called her recently, in her presence, by way of compliment, "my better half." "Your better half!" said she, with a disdainful toss of the head, "you had best say your best three-quarters; you are not more than one-fourth of the joint concern no how!"

CLARK'S FRACTION HORSE POWER.



The above engraving represents the application of horse power in a very diversified manner by friction rollers on which there is a top circular rail for the horse or horses to be attached by levers, and which rail is left out of the engraving to show more clearly the interior working of this machine, so well adapted to so many purposes.

A A, is a circular firm frame, and B B B B are friction rollers secured to this frame, they having flanges on the outer edge. C C C C, are drums on the shafts on which belts may be swung to drive the machinery. The rail is placed on the rollers, the horse is attached to the lever inside the ring and the weight of the rail causes it to adhere sufficiently to the rollers to drive them, from which motion is communicated to any machinery to be driven

The inventor, Mr. Henry Clark, of Eufala, Alabama, has several modifications in his specification, such as the shape of the under side of the rail; arranging the drums inside the ring; attaching the horse outside, &c. It will be seen he says, that the power of a horse on his machine is as economically applied as on a level railway, and is well adapted to driving cotton gins, corn mills, &c., the cost being less than any in use. Belts may pass in any direction by arranging the drums on the frame.—Any kind of saw may be used on the roller shaft, by crank or otherwise. The horses may be attached to the outside of the rail by putting the drums inside. And what he claims as his invention is the circular rail as a prime mover and medium of power for driving machinery either by horse or other power.

These machines can be made of any diameter considered the most economical for the horses; 31 feet, however, is the best working medium. Mr. C. has taken measures for procuring a patent.

Nonsuiting a Creditor.

There was a certain lawyer on the Cape, a long time ago, the only one in those "digins," then, and for aught I know, at present. He was a man well to do in the world and what was somewhat surprising in a limb of the law, averse to encouraging litigation.

One day a client came to him in a violent rage. "Look-a-here, Squire," said he, "that 'ere blasted shoemaker down to Pigeon Cove has gone and sued me for the money for a pair of boots I owed him. "Did the boots suit you?" "Oh! yes—I've got 'em on—fust rate boots." "Fair price?" "Oh! yes." "Then you owe him the money honestly."

"'Course." "Well, why don't you pay him?"—"Why, 'cause the blasted snob went and sued me, and I want to keep him out of the money if I kin." "It will cost you something." "I don't keer a cuss for that. How much money do you want to begin with?" "Oh, ten dollars will do." "Is that all. Well, here's an X, so go ahead," and the client went on very well satisfied with the begining. Our lawyer next called on the shoemaker and asked him what he meant by commencing legal proceedings against M———. "Why," said he, "I kept on sendin' to him for money till I got tired. I know'd he was able to pay—and I was 'termined to make him. That's the long and short of it." Well," said the lawyer—"he's been a good customer to you, and I think you acted too hastily. There's a trifle to pay on account of your proceeding—but I think you'd better take this five dollars and call it square." "Certain—Squire—if you say so—and glad to get it," was the answer. So the lawyer gave one V and kept the other. In a few days the client came along and asked him how he got on with his case. "Rapidly!" cried the lawyer—"we've nonsuited him! he'll never trouble you." Jerusalem! that's great!" cried the client—"I'd rather gin fifty dollars than have had him got the money for them boots!"

A Queer Chap.

Near a village, called Seguin, away down west, there lives a queer old fellow who has a strange habit of using the longest words, and invariably misapplying them, for instance: he wished to sell some lots—"Look here, gentlemen, if you wish to make fortunes, here's the location for a magnanimous city, we're at the foot of navigation. Next year I'll put a lawyer's fixins, apothecary's doins, and a blacksmith's institution, and afterwards a reg'lar semetary, where all the folks from the circumjasper countries will send in their boys and gals of both sexes to be McAdamized into a college edication. Then I'll instruct a meeting-house, and the stores and taverns will spring up in course. Come in, gentlemen, let's liquor."

This is a very stormy night husband. Oh, not very, my dear, you have said but little.

LIST OF PATENTS

ISSUED FROM THE UNITED STATES PATENT OFFICE,

For the week ending July 17th, 1847.

To William E. Cornell and Charles W. Brown, of Boston, Mass., for improvement in gearing for connecting feed or pressure rollers. Patented July 17, 1847.

To Wilbur M. Davis, of Gardiner, Maine, for improvement in changing gear. Patented July 17, 1847.

To Ebenezer Knight of Brooklyn, N. Y., for improvement in ventillating the timbers of vessels. Patented July 17, 1847.

To William C. Bussey, of Rockgrove, Illinois, for improvement in coupling for Cars. Patented July 17, 1847.

To Alanson T. Odell, of Royalton, N. Y., for improvement in Cultivators. Patented July 17, 1847.

To Charles J. Gilbert and Gamaliel Gay, of New York, for improvement in India Rubber fabrics. Patented July 17, 1847.

DESIGNS.

To William Resor, of Cincinnati, Ohio, for design for Stoves. Patented July 17, 1847.

To Charles J. Woolson, of Cleveland, Ohio, for design for Stoves. Patented July 17, 1847.

What a Hog can do.

The guide at Niagara was surprised lately on entering the "Cave of the Winds," with a party, to find it tenanted by a full grown, well conditioned porker, alive and kicking, although bearing evident marks of pretty hard treatment. Nearly one hundred feet below the upper world and some fifty feet above the boiling flood in the abyss, beneath the pouring sheet of the centre fall, was piggy, "monarch of all he surveyed." How long he had been there, no one could tell, and where he came from was still more unaccountable, unless he had made the fearful plunge over the precipice, and climbed up the broken rocks to the cave, where he was found. Several citizens assisted in bringing his hogship to the top of the precipice alive. The only injury discovered was a severe contusion on the nose that had opened the upper jaw and started several of his front teeth.

He was undoubtedly a *belter* from the great convention and had navigated his way down to hog's hollow.

Musical Fish

It is stated that the muddy creeks and shoals around Bombay, in the East Indies, abound with a species of fish which produce the most exquisite music—like a musical bell, or the strain of an Æolian harp. The fish closely resemble in size and shape the fresh water perch of the north of Europe.

There are plenty of such fish here, though not of the same shape, but after a cold long winter their song is exceedingly sweet. They are called bullfrogs.

Freaks of a Sailor.

A sailor, mate of a vessel at East Boston, perhaps a little disguised with liquor, came across a cow quietly feeding in the streets of that place and jumped upon her back. The frightened animal started down the street with its unusual burden, much to the amusement of the spectators. Having reached the end of the street, the sailor jumped off, and with a loud cry of "Starboard your helm!" jerked the cow round by the tail, jumped on again, and rode back to his original starting place. The owner of the cow, upon hearing the facts, was disposed to sue the sailor for damage done to the cow; but the matter was settled by his paying ten dollars for his ride.

Steam Engines in St. John.

Since 1835, forty seven engines have been made in St. John, N. B It is getting to be a thrifty place.

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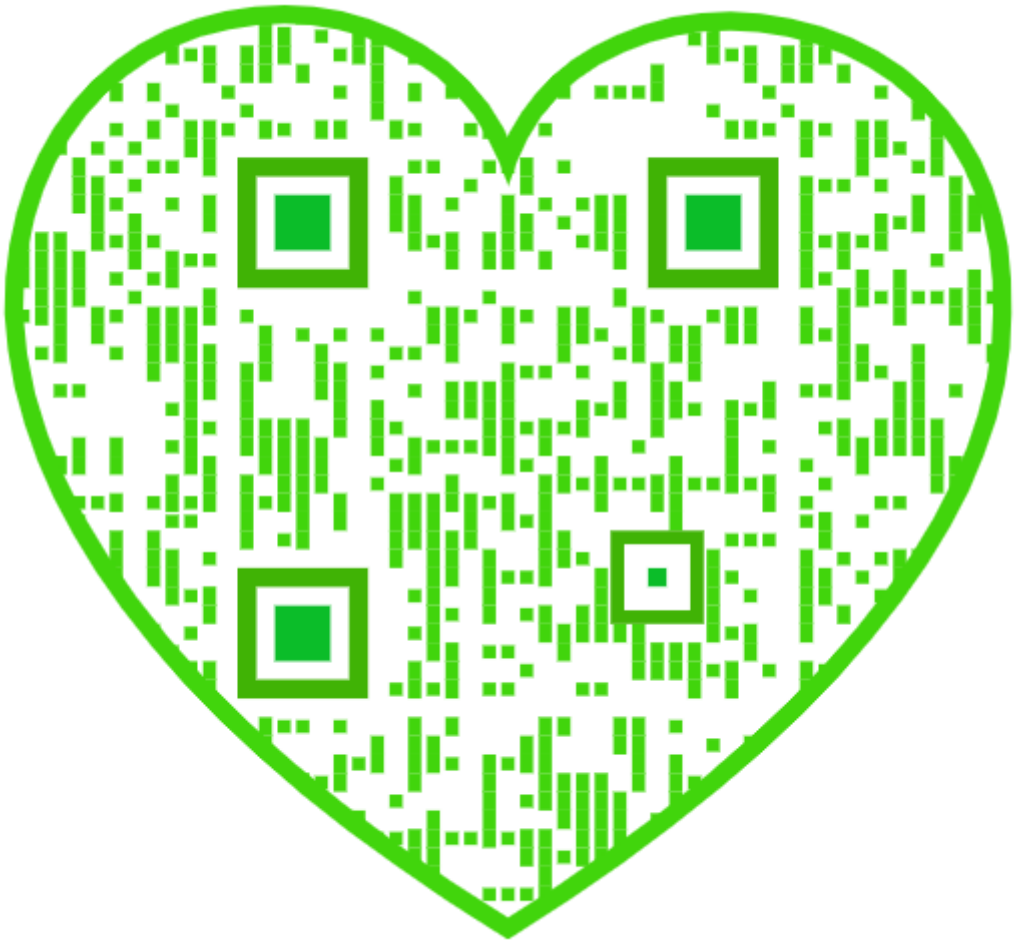

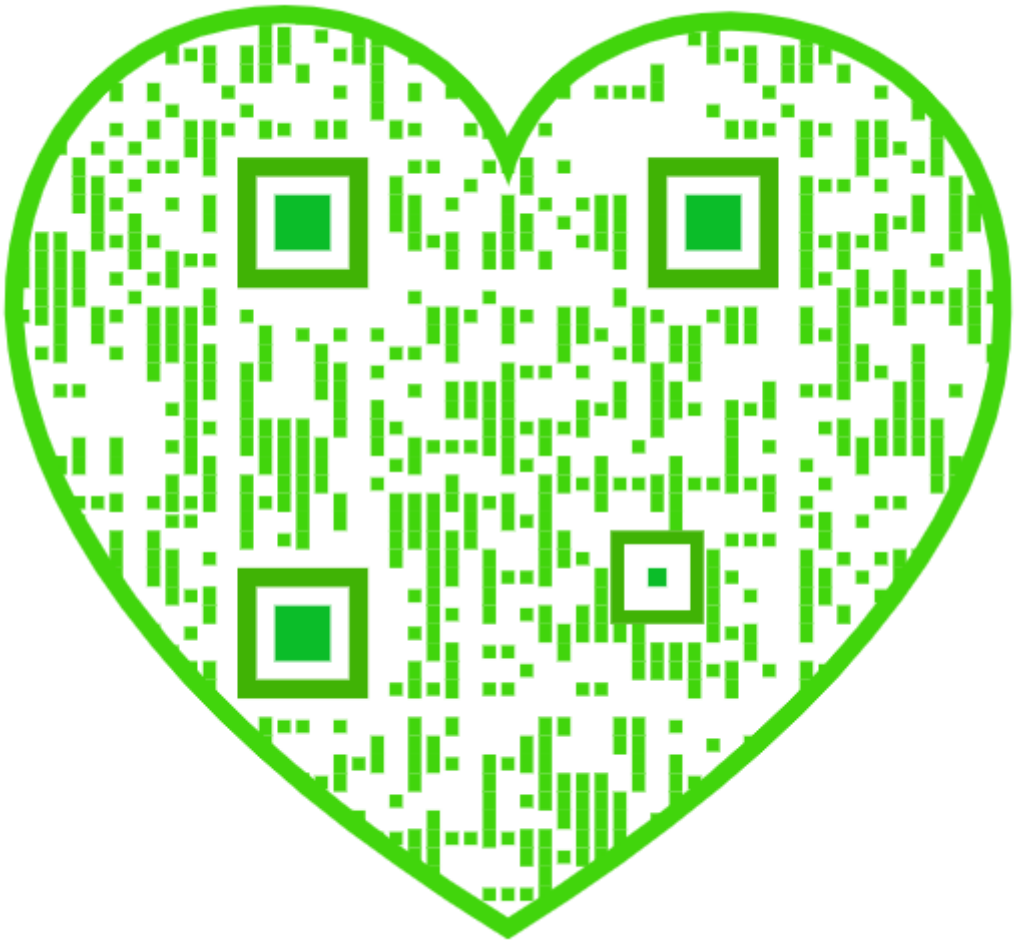

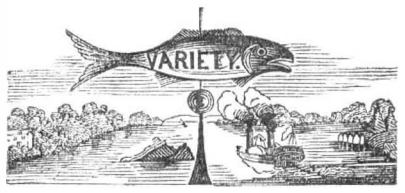

Melancholy Accident.

Mrs. Julia Whiting a lovely and estimable woman, of Brooklyn, lost her life, by the explosion of a spirit gas lamp while she was attempting to fill it when burning about 10 o'clock, on the evening of the 16th inst. She was the wife of Mr. John G. Whiting It appears that she had been indisposed for a few days previous, and her husband being absent she endeavored to fill the lamp for the purpose of keeping it burning until his return. The explosion was instantaneous, scattering the liquid over her person and before assistance could possibly be rendered she was burned almost to a crisp. Medical aid was immediately called in, but all attempts to alleviate her condition proved futile, and after lingering for a short time she breathed her last, suffering the most excruciating torture. We would desire to impress upon the minds of our readers by this fatal accident, that in no case ought the globe of a camphene lamp to be taken off for the purpose of filling it up—it is as dangerous as gun powder.

Uses of Wood.

In addition to the numerous mechanical uses of wood,' says Mr. Griffiths, 'and its chemical use as a sort of artificial heat, the chemist discovers that it is capable of the most curious change or transmutation into edible matter; in fact, a kind of bread may be made from wood This is effected by selecting the saw dust of the least resinous wood —that of beach, for example—washing it with water to remove all soluble matter, and then gently drying it in oven; after this, it is mixed with marshmallow juice, and formed into cakes, which are baked at a high temperature; and these reduced to a fine powder, with the addition of a little corn flour and leaven, form a dough, which, when moulded into loaves, and baked, constitutes bread more palatable than that prepared in times of scarcity from bran and husks of corn.

Cheap Houses.

From various experiments which have been made within a few years, the evidence is becoming strong, that the best mode of building dwelling-houses, for combining cheapness, durability, solidity, warmth, and dryness is with *unburnt brick*. A number of houses have been erected with great success with this material, at the village of Geneva, in Western New York, within a few years, and their superiority has also been proved at Chicago, as appears from an able and interesting communication on this subject, which appeared a few weeks since in the Prairie Farmer. In both these localities, which, from the statements of different builders, nearly agree, are and apparent and striking. Time will test the experiment.

Melancholy Effects of Folly.

Let the old learn wisdom. A married lady, Mrs R dall, of Baltimore, recently swallowed a large dose of laudanum. and, refusing all antidotes offered by the physician and friends died in a few hours. It appeared that she had lived in undisturbed happiness for twelve years, up to the night of the illumination of the city in honor of the victories in Mexico. On that evening she desired to walk out to see the illumination, and her husband refused to accompany her. She shortly after went out with a male friend, and whilst out met her husband walking with another woman These acts of imprudence on the part of both, blasted domestic peace. and the wife sought for repose in the suicide's grave, leaving a family of helpless children motherless.

Women.

Cobbett says—" Woman, so amible in themselves, are never so amible as when they are useful; and. as for beauty, though men may fall in love with girls at play, there is nothing to make them stand to their love like seeing them at work "

Chapel of the Medici.

This celebrated chapel is in Florence. It was commenced in the year 1600, but it is not yet complete. Although very extensive, it is said that so large is the sum already expended upon it that its weight in gold would hardly purchase it. Twenty millions of francs have been laid out, and millions must yet be added before its completion. It is the mausoleum of the Tuscan Princes, and is embellished by the choicest works of genius, both in sculpture and painting.

Newburgh Yacht.

This vessel is a novel one. Her keel is a curiosity It is 5½ feet broad, clear of garboard streak, and 64 feet long. The yacht is about 75 tons. Length 69 feet on deck. Width of beam 20 feet 3 inches. She is to be schooner rigged,—masts 94 and 96 feet. From the end of main boom to end of jib-boom 122 feet. She is fitting up in the most elegant and costly manner.

Coal-Fields in Virginia.

In the last number of the *Mining Journal*, we find an account of a memoir read before the Geological Society, London, by Professor Lyell, on the structure of the Coal-Field of the James River near Richmond, Va, by which it appears that it is 20 miles by from 4 to 12 in size, with rich seams of bituminous coal one of them 30 to 40 feet thick. The coal yields abundance of gas, used for lighting the streets of this City; and Professor L. thinks that the vegetables which produced the coal grew where it is now found. Some of the mines are 900 feet deep.

Gold and Silver Ore.

A gentleman in Pittsfield Mass, who has been residing and transacting business several years near Senora and Tepic, in Mexico, near the Pacific ocean, has returned, and has shown some specimens of gold and silver ore, from that country. One specimen is a rough piece of quartz not larger than a goose egg, in which pure gold is irregularly mixed, of the value of more than one hundred dollars! Some of the specimens of silver ore are equally rich.

Office Hunting.

Mr. Marcy of the War office is a wag, as every body knows. The death of Mr. Beasly, consul at Havre, having brought the usual number of applicants for the succession in hot haste, all of whom from New-York were eager to get the Marcy influence. A few mornings since, the correspondence of the Baltimore Patriot says, on coming out of his house he saw before him a score of New-York faces, and exclaimed, *hallo! who's dead now?*

Launch.

A most splendid ship, to be called the Esther May, was launched in beautiful style from Crandall's ship yard Boston, on Saturday last. She is 500 tons burthern, built of live and white oak. Her length is 128 feet—breadth of beam 30 feet—depth of hold 19 feet, and is copper fastened throughout. She was built for Messrs. Hardy, Baker, & Morrell, of Boston, and is intended for the freighting business. She is one of the most thorough and substantial ships ever built in New England.

New Hydraulic Apparatus.

The Bonded Warehouse in Broadway, may now be pronounced fireproof. A hydraulic apparatus has just been constructed, which is capable, if necessary, of inundating every floor in this large building. It has been got up under the supervision of the Chief of the Fire Department, and no doubt is entertained of its efficacy, in time of need. The apparatus was tested on Saturday at noon, and was found to work admirably.

Knapp's Summer Beverage.

Knapp, of 130 Fulton street, (Sun building) is supplying his patrons with his celebrated Sarsaparrilla Beer, in immense quantities, these hot days. All those who have not yet become acquainted with this new temperance beverage, would do well to call in, and quench their thirst with this delicious and healthy beverage.—He informs us he has sold 140 gallons per day during the past week.—It may be bottled for family use

INVENTORS' CLAIMS.

Gearing.

Invented by William E. Cornell & Charles W. Brown of Boston, Mass., for connecting feed or pressure rollers. Patented 17th July, 1847, No. 5191. What they claim as their invention, and secure by Letters Patent, is the method of communicating rotary motion, in the reverse direction, from one roller, or shaft to another, by means of two auxiliary wheels, whose axes are independent of the frame, so connected with each other and the wheels on the axles of the rollers, &c., by jointed links, so as to admit of varying the distance between the two rollers, of shafts at pleasure. And in combination with this they also claim the diagonal link or links for retaining the auxiliary wheels in their proper position, relatively to the wheels on the axles of the rollers.

Ship Ventilation.

Invented by Ebenezer Knight, of Brooklyn, N. Y. Improvement in ventilating the timbers of vessels. Patented 17th July, 1847; No. 5193. What he claims as his invention and secures by Letters Patent, is the employment of the motion of the bilge water in vessels, induced by the motion of the vessel in combination with the air passages opening to atmosphere, and the openings in the salt slops, where such are used, for the purpose of ventilating the spaces between the timbers of vessels.

Changing Gear.

Invented by Wilbur M. Davis, of Gardiner, Maine. Patented 17th July, 1847; No. 5192. He does not claim engaging and disengaging a shaft and cog-wheels, by a sliding connecting plate, but he merely claims the described mode of changing the speed of the shaft carrying the article to be wrought during the operation of the machinery, by means of combination pinions with a shaft, sliding connecting plate, rod, collar and lever, arranged and operated on in a peculiar manner.

A New Invention.

We have just examined a new and beautiful style of engraving, for door, carriage, or in fact for any description of engraved plates or numbers, invented by Mr. J. A. Pease, who has secured his invention for the same. It is a very neat and ingenious affair and must entirely do away with the old system of engraving plates, as by this method they can be sold for one half the usual price. As a door plate is indispensable to every respectable house, we bespeak great success for the invention.

Mines.

The *Mining Journal* shows that, last year, on ten mines in Cornwall a profit of $550,000 had been divided among the shareholders, although the outlay was only $170,000 Other 18 mines, now abandoned, had, during the time they were worked, yielded a profit of $15,000,000. To make advantageous investments, however, there must be both judgment and economy, otherwise great losses may be incurred.

Gold and Silver Mines of America.

All the gold ever discovered in the new world, says the Mining Journal, would not fill half of a Paris shop-keeper's drawing room. The annual value of the gold mines of the United States is $1,200,000; of the gold and silver mines of Mexico $20,000,000; ditto Peru $51,000,000, (chiefly in silver); of New Granada $3,500,000; of Brazil (gold only) $1,700,000.

Dividend.

The Delaware and Hudson Canal Company have declared a semi-annual dividend of ten per cent The Company is in a highly prosperous condition, averaging five per cent semi-annual dividends, besides expending some two hundred thousand dollars during the last three years in deepening the canal, and constructing an immense island wharf at Rondout.

New York Canals.

The Canals of our State continue to do a tremendous business. The sum total of tolls received during the 75 days of navigation ending 14th instant was $1,523,480—which is $411,000 more than was received during the 90 days of navigation ending at the same date last year

FOREIGN NEWS.

The Britannia arrived at Boston on the 17th She brings news of another reduction in the prices of provisions. The British have again been fighting with the Chinese. Six forts and 876 pieces of cannon were taken in two days. The young Queen of Spain is determined to have a divorce from her husband—" uneasy is the head that wears a crown." A large squadron is assembling at Spithead under Rear Admiral, Sir Charles Napier. There are 4 ships of 120 guns, one of 110, three 80 guns, 1 frigate and 14 steam ships of War. This looks fierce. Oysters have arrived in fine condition from America. A plan is proposed in London to form a colony on Vancouver's Island, Oregon. Statues of Peel and Cobden have been cast at Colebrookdale Iron Works. The grand Duke of Tuscany has established the freedom of the *press* in his dominiom. Mr. Ewart proposed in Parliament to abolish all taxes on foreign supplies and to support the government by direct taxation.

A Model Factory.

In a factory recently established at Bradford, England, the operatives are required to work only 10 hours a day, and with the factory is connected an excellent school, &c., with improved accommodations for boarding and lodging.

Fever

The fever prevails to a most alarming extent throughout all Ireland and those places in England and Scotland adjacent to it.

LATE FROM MEXICO

The American prisoners at the city of Mexico have been sent to Huejuila, where they are detained.

It is rumored that the Mexican government has accepted the mediation of England. It is said that the English Secretary of Legation, has opened negociations with Gen. Scott, for a treaty of peace, upon the terms of the surrender of the Californias to the U. S., the recognition of the independence of Texas, and the acknowledgement of the line of 36 degress as the northern boundary between U. S and Mexico.

The election for President of Mexico resulted in no choice.

It was expected that Gen. Scott would march on the Capital by the end of June Nothing appears in any of the papers in relation to the preparation made to receive him.

Industrial League.

The workmen of Louisville, Ky. have organized an " Industrial League," among other objects looking to the establishment of the *ten hour system* by law, and to the exemption from execution and sale for debt, of the mechanic's tools, and of two hundred dollars worth of household or other goods to every citizen having a family in the State.

British and French Railroads.

The British and French Railroads, must nett a vast deal of money. The incomes of certain railways for the first week in June last, were as follows. The London aud North Western yielded $249,670—the Great Western, &c. $116,955—the Midland, Bristol and Birmingham $100,485—the Paris and Rouen $39,725.

Hudson River Railroad.

Contracts were made on Monday, for constructing the whole of that part of the Road from the Duchess county Line to this city, including that section known as Break Neck Hill—the most difficult part of the route The gentlemen who have taken the lead in this great work, deserves the highest credit for their perserverance in settling the numerous right of ways, along this line. The completion, within the coming two years, of the Erie, Hudson, and New Haven Roads, are events of the highest importance

Canada Mining.

Several Acts of Incorporation for Silver and Copper Mining Companies, on Lake Superior, are in progress through the Canadian Legislature. Masses of ore have been analyzed and found to be rich with silver

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THE AMERICAN MECHANIC.

BY AUGUSTINE DUCANNE.

Lift up thine iron hand,
Thou of the stalwart arm and fearless eye;
Lift proudly now thine iron hand on high—
Firm and undaunted stand!

No need hast thou of gems,
To deck the temple of thy glorious thought—
Thou hast the jewels which thy mind hast wrought,
Richer than diadems!

Thou art our God's high priest,
Standing before great Nature's mighty shrine;
For the whole world the glorious rask is thine,
To spread the eternal feast

Even like the Hebrew chief
Strikest thou the rock, and from its deep,
Mysterious heart, the living waters leap,
To give the earth relief.

Mighty among thy kind,
Standest thou, man of iron toil, midway
Between the earth and heaven, all things to sway
By the high-working mind!

Thou canst delve in the earth,
And from its mighty caves bring forth pure gold;
Thou canst unwrap the clouds in heaven rolled,
And give the lightning birth.

Thou hast the stormy sea
Chained to thy charriot wheels, and the wild winds
Obey the o'eruling intellect that binds
Their rushing winds to thee.

Thou canst bid Thought go forth,
Upon the electric pinions of the air,
And through the opposeless ether thou canst bear
Thy words from South to North.

Thou canst new lands create,
Where the wild-rolling wave no mastery owns,
And the vast distance of opposing zones
Canst thou annihilate!

Lift then thy hand to heaven!
Spread thy toil sceptre o'er the sea and land:
Thou hast the world intrusted to thy hand—
Earth to thy charge is given!

Copper and Silver Mines, Mexico.

The London *Mining Journal* of 12th ult. contains full statements of the operations in the various mines, at Riapas, Guanaxuato, the Balamos, and Copiapo Mines and those at Larga, Pachuca, Real Delmontes, &c. The *Alexander Harvey* and the *Michael Williams* had arrived at *Swansea*, in South Wales with 710 tons copper ore, and 4 tons silver ore, to be there smelted. Copper ore, value $240,000, was sent to Swansea, Wales, to be smelted, last year, from Australia. In Chili, they smelt the copper ore themselves, and thus export it to Europe.—At the new smelting works in Chili, copper as pure as any in England will be produced—and if in South America, why not also on Lake Superior? England derives some $200,000 a year of revenue from duties levied on foreign copper ores brought to her ports to be smelted. Messrs. Gemmel & Co. in a letter to Mr. McGregor Secretary to the Board of Trade, advise the removal of these duties, as if continued the smelting trade will centre in Chili, or be transferred to "manufacturing rivals in the United States, France or Belgium." On May 27th, about 7,100 tons of copper ores were sold at Truro and Swansea, at from $6 to $115. One ton of Canadian brought only $261, which would not pay expenses.

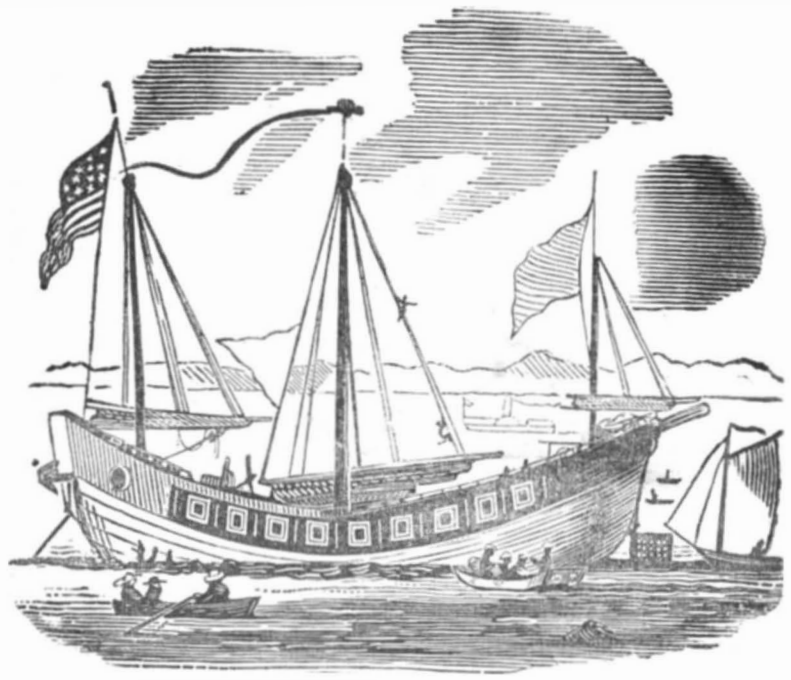
Consumption.

It is stated that in England, there are always 130,000 persons dying slowly from consumption. The fact has been proved by the registration returns. There were 34 deaths by it in this city last week.

Western Boats.

It is stated in the St. Louis Herald that the boats go about two mile in five hours through the Louisville Canal. These must be antipodes to the telegraph, but the fault is in the road, not in the traveller.

THE CHINESE JUNK.



The above is an engraving of the famous Chinese ship "Keying." We cannot tell whether she ever stood a brush with the English or not, but she is bored for carrying 30 guns. She is painted in a fantastic manner, like the spotted Tartars, who throw somersets when they make a charge. She is 150 feet long, 25 feet beam and 12 feet hold, and built mostly of teak wood. Her cabin is large and airy, and full of curiosities. She is rigged with latteen sails that are worked from the deck, and was 212 days on her voyage. There are 40 Chinese as part of her crew, the rest Europeans. The Chinese are a weakly looking race in comparison with their brawny Anglo Saxon comrades. There are no females aboard from their celestial land, and we missed a sight of the little feet, but we have seen them before, and think that the Junk as she is, will satisfy the curiosity of any of us Yorkers for once, and when she comes back again Killet, the master, will be sure (having got his hands in), to bring over some slippers with feet in them.

The Chinese vessels, or junks, as they are called, have been aptly compared to their shoes; and their form is so clumsey, and the absence of a keel is so important a defect, that there is no possibility of any great improvements in their construction, until the prejudice of the builders shall be so far overcome as to change their plan in these two fundamental points. In order to place the rudder, they think it necessary to split the stern, which exposes the vessel to danger. Their substitutes for tar and oakum are bad; a mixture of oil and gypsum, and bamboo shavings. Their common sails are mere mats, which are not very easily managed, but yet are flat, and enable the vessels to lie nearer the wind than ours. The absence of keel, however, allows a monstrous lee way. Their anchors, strange to hear, are made of wood, though a heavy kind, called by them *teih-mo*, (iron wood.) They often carry loose cotton topsails in light wind The seamen worship the Queen of Heaven as their protectress and also their compass, which has red cloth upon it, and a kind of sacrifices are made before it.

A Steam Horse.

A correspondent of an exchange paper, gives the following quaint description of the locomotive:

"I love to see one of these huge creatures with sinews of brass and muscles of iron, strut forth from his smoky stables, and saluting the long train of cars with a dozen sonorous puffs from his nostrils, fall gently back into his harness. There he stands; champing and foaming upon the iron track, his great heart a furnace of glowing coals, his lympathic-blood boiling in his veins; the strength of a thousand horses is nerving in his sinews; he pants to be gone. He would "snake" St. Peter's across the desert of Sahara, if he could be fairly hitched to it; but there is a little sober tobacco-chewing man in the saddle, who holds him with one finger, and can take away his breath in a moment, should he grow restive and vicious, I am always deeply interested in this man, for begrimmed as he may be with coal dilluted in oil and steam, I regard him as the genius of the whole machinery, as the physical mind of that huge steam-horse."

Idle Daughters.

It is a most painful spectacle in families where the mother is the drudge, to see the daughters elegantly dressed reclining at their ease, with their drawing, their music, their fancy work, and their reading, beguiling themselves of the lapse of hours, days, and weeks, and never dreaming of their responsibilities; but as a necessary consequence of neglect of duty, growing weary of their useful lives, laying hold of every newly invented stimulant to arouse their drooping energies, and blaming their fate, when they dare not blame their God, for having placed them where they are. Such scenes are becoming to common in our Republic.

The Albany Knickerbocker on the dignity of the lowly.

Has not the child of the beggar qualities as noble and as much appreciated by his associates as the sons of the rich—and does not his death awaken regrets and sorrows as keen and abiding, and as lacerating to the heartstrings of his relatives, as when the rich man's son dies? God in his doings has been guilty of no such favoritism or degrading purposes, as the aristocratic would ascribe to him. He has implanted as noble qualities of soul, affections as strong, sensibilities as tender, and sorrows as touching in the poor as the rich, in the low, as the lofty. Would you seek out the evidences of rock-based affections, of pure love, of warm friendships or witness the gushings from deep fountains of grief and sorrow, look into the habitations of the poor and the low born. There, amid the deprivations of poverty, will be found evidences of noble thoughts, more generous impulses and tender sensibilities, than in the stately mansions of the rich and the proud. Noble sentiments, gallant Hastings.

Foreign Officials.

A correspondent of the National Intelligencer says, that a curious comparison has lately been made between the Government power and influence in France and that in Great Britain. This comparison represents the number of civil officials in France as being 932,000; those in England, including coast guard, 28,578. The French Minister of Finance has twelve times as many officers under him as there are in the whole of the Government officers in England. So far as political representation goes, France has about 200,000 electors, or about one to every 176 of her population has a voice in the legislative proceedings of the country; the number of electors in England and Wales is 900, 000, or one in every 27.

To Construct a cheap Galvanic Pile.

To exhibit experiments in Galvanism, on a small scale, a pile may be formed at a very trifling cost, as follows:—

Procure about twenty cent pieces, (if worn smooth so much the better) or get some sheet copper cut circular, and of a large diameter, and the same number of similar pieces of zinc. The latter may be formed by the experimenter himself, being very easily melted, it may be cast in a mould like lead, or it may be procured in a sheet, and cut, similar to the copper. Then provide the same number of pieces of cloth, which must be soaked in a solution of common salt water; or, what is better, a liquid composed of one part of sulphuric acid, two of nitric acid, and sixty of water. After this is done, place one of the pieces of zinc in a tea-saucer, and on it put one of the pennies, or pieces of sheet copper; on this place a piece of cloth, and so continue making the pile—zinc, copper, cloth—until they are all piled on one another; taking care to observe the same arrangement throughout. The piece on the top, which will be a cent, should have a copper wire, which for some experiments, should be tipped with platinum wire, soldered to it, and the lower piece, which will be zinc, should be treated in the same manner. From the ends of these wires a stream of the Galvanic fluid will constantly issue, until all the acid is absorbed from the pieces of cloth; and although the apparatus is on a very small scale, a variety of exceedingly interesting experiments may be performed with it.

A cheap cement for cementing voltaic plates in wooden troughs is made with 6 lbs. of rosin, 1 lb. of red ochre, half a pound of plaster of Paris and half a pound of linseed oil. The ochre and the plaster of Paris should be calcined beforehand and added to the other ingredients in a melted state. The stronger the junction is, the thinner the stratum of cement that is interposed. There is another cement made of 16 parts of whiting sifted and thoroughly dried by a red heat, adding when cold a melted mixture of 16 parts of black rosin and one of beeswax, stirring it well when it is cooling.

The Abuse of Ether.

A correspondent of the London Times, gives the following example of the abuse of ether—the letheon or apatheon fluid:

"Entering a chemist's shop the other day, I observed a nurse come in for four ounces of ether. As the chemist poured it out, he said to me, 'This is all the go now—it is used for inhalation.' A small apparatus has been invented for ladies. So delightful are the sensation it produces, that persons who have used it for the relief of pain continue to use it for the pleasure it affords. On a former occasion I had warned a chemist of the danger of yielding to a habit which would become his master. The warning was neglected—the habit has gained the mastery—and the man of talent and of energy has become the imbecile, drivelling idiot.

The Calculating Negro.

Is a fat, idiotic looking man of about twenty-one years of age, and would probably weigh about two hundred. He has considerable physical power, but knows so little how to apply it, that he has never done a day's work in his life, he cannot without awkwardness and difficulty cut his own meat at meals. He is, an idiot, showing scarcely a spark of intellect, except in his strange, untaught, incomprehensible power of arithmetical computation, and here nature seems to have tried a mode of compensation by raising him as far above the ordinary mind in this respect, as in every other respect he falls below it.

He has told the product of any two numbers under 100, as 66 times 97; the solid contents of his room from supposed data; extracted the square and cube root of any numbers where they could be found without decimals; all far more rapidly than the most expert 'cypherer' could do by his slate.

The limit to his owners of calculation seems to lie only in his inability to comprehend the language in which many questions must be proposed. We believe he is a native of Kentucky.

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NEW INVENTIONS.

Improved Power Loom.

Mr. Richard Collins, of Cabotville, Mass.; has made an improvement in the power loom, whereby, it is said, that 160 picks per minute can be as easily performed by it as 112 by the common loom. There must be something in the improvement that smooths the shot and operation of the reed batten, as it is not prudent nor profitable to drive the common looms over 120 picks per minute, because of breakage in both warp and weft. In what the particular improvements consist, we have not been informed, although it is highly spoken of by some of our exchanges, which say that there is no *cam movement* about it, but the *harness is changed by an eccentric*, probably forgetting that the treddles of the old loom are moved by eccentric cams.

Another Corn Dryer.

Mr. James Deniston of Gratis, Preble Co., Ohio, has invented a new Corn Dryer by which he can dry 20 or 60 bushels at once.—It is simply by having flues surrounding the main heating pipe and into them the corn is fed by a hopper-boy that turns the corn and by allowing it to pass out by an incline of dip enough just at the time when the corn may be exactly dry, for there are some kinds the patentee says, that take longer to dry than others, and he is to have a pipe from each of the flues to let out the steam from the corn (something that seems to have been overlooked by others but all important) as sometimes there is a great deal of moisture which must escape, and the sooner it is set free from the grain, it will be sooner dried and thereby save much fuel. The principle of a single flue we think is not quite so good as that proposed by Mr. Bulkley for drying by steam, but the tubes for the escape of the moisture is an advantage in Mr. Denniston's, and the whole machine with him is original.

Yeaman's Improved Wheat Fan.

At a time like the present, when wheat is so readily converted into cash, it needs no argument to convince farmers that any invention designed to facilitate the production of this grain, or its preperation for market, is a matter that deserves their attention. Exactly of this character is the machine above named, which was exhibited in this city a day or two since. It is the invention of Mr. Stephen M. Yeaman, of Elizabethtown, Ky., who is now making a tour for disposing of rights in this State.

The machine is of the ordinary form and size, and the improvements consist, 1st, in dispensing with the board or *shoe* at the bottom of the hopper, and substituting a revolving apron, or feeding belt to carry the grain on to the sieves, or riddles—2d, a row of vibrating fingers, made of strong iron wire, which receive the straws and chaff, and greatly assists in seperating them from the grain as it falls from the apron to the sieves—3d, a contrivance by which the three sieves, and the fingers before named, are made to vibrate ulternately with and opposite to each other, and so quietly as to avoid the noise and jar attendant upon the operation of ordinary machines, while it allows of a greater width of wire and secures a more perfect riddling of the grain. In fact we are confident that this peculiarity alone is sufficient to commend the invention to all who are familiar with the operation of such machines, and will in a short time secure for it very general use among the farmers.

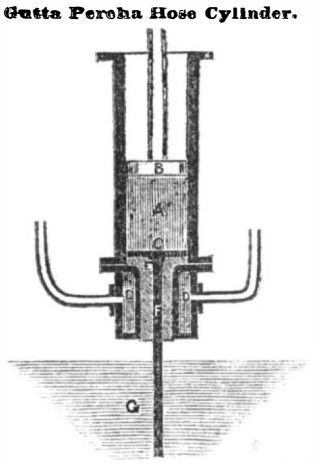
Improved Truss.

Mr. S. P. Hastings, of Albany, has sent us metalic truss, which is said to be most easy in its uses, and very effective for the purpose designed. It is cooler in warm weather than the common kind in use, and by the springs upon which its armatures are suspended, it must operate beneficially upon all who use them.

Double Acting Water Wheel.

Mr. T. D. Stetson, of Kingston, Mass., has invented a double acting water wheel, which from a small model has operated very favorably and promises to be of great advantage. It would be of vast importance if some person with sufficient capital would assist him to put up one on a large scale.

Gutta Percha Hose Cylinder.



The above cut is a representation of a form of cylinder used for the making of tubes, hose and such articles of that strange substance which we have recently brought to the notice of our readers. A, is a cylinder containing the gutta percha. B, is a cistern for pressing the stuff which must be in a plastic state, through the disc C, which is perforated with holes to allow the percha to be pressed into the die box E. The die box is kept hot to keep the gutta percha in a right state for moulding by the steam boxes D D, the steam being admitted through the tubes in connection. F, is a core pipe, which passing down the centre into a cistern of water F, shapes the hose or tube by the gutta percha being forced by the piston through the disc and into the die box all round the core F. Every stroke of the piston presses down the percha upon the core F further and further, which adheres to it in its warm liquid state until it reaches the cold water, when the percha is congealed and hardened into flexible and durable tubes. Sometimes tubes are made by rolling a long sheet of the gutta percha around a mandril and cementing the edges with a liquid solution of it, and by having the mould engraved, anykind of figure raised or damask, will be imparted to the gutta percha. By our late English exchanges we perceive that gloves for dissecting are made out of it, giving security to the anatomist and surgeon, who although he may have a puncture on his hand, may proceed in the operation without fear of the result. They are said to be thin, delicate and elastic, and quite free from the least stickiness.

Improvements in Calico Printing.

The company of the Merrimack Print Works in Lowell Mass, has made great improvements, it is said in the engraving of the cylinder rollers for the Printing. It seems that a Mr. Whipple with a few diamond point gravers and acids has produced in a few hours, highly finished copper rollers for printing calicoes, the engraving of which had cost two or three week's time. He has recently invented a machine for shearing all the threads and lint from the surface of the cloth to be printed. This machine shears five hundred pieces of cloth a day, and makes a saving of some five or six dollars a day and at the same time does the work much better than by the old process. We had not the satisfaction of seeing this machine in operation, but are quite interested in its movement. This machine has been patented and the inventor, whose name we have not before mentioned, Milton D. Whipple, can dispose of his right to it for a handsome fortune. He has also invented a machine for printing paper hangings by rollers, thus doing away with the present slow and tedious method of block printing. This will effect an entire revolution in the paper hanging business. For this invention an exchange paper says that he has been offered a large sum, but prefers to be interested in the manufacture. He is now employing a part of his time in the engineering department of one of the manufacturing companies there.

Wire Fences.

Fences made of wire galvanized (by zinc) are now becoming of common use in England. They are generally about three and a half feet high fastened on stone posts, or iron, and the wire crossed in diamond form throughout every block between the posts. They are very durable and said to be far cheaper than those made of wood. They can also be made into most beautiful and elegant forms for gardens and door plots.

Purifying Oils.

A Mr. Bancroft has taken out a patent for the better purifying oils, tallow, lard, &c. of which the following is a description. Oil is heated to about 90° and a strong solution of soda added at the specific gravity of No. 1.2 hydrometer, or even stronger, (this is strong enough.) During the time of adding the alkali the oil is continually agitated to mix the ingredients thoroughly. To ascertain when the operation is completed and a sufficiency of alkali added, a small portion is taken out and put into a glass bottle and an additional quantity of alkali put into it, shaked well and allowed to stand for a quarter of an hour.—Should the alkali then settle quite clear, without a thick deposit taking place, the oil is sufficiently refined, but if a thick deposit takes place more alkali is added to the boiler until the test effect is produced. The quantity of alkali to be used depends entirely on the quality of the oil to be refined. When the test effect is produced, the whole of the stuff is allowed to rest for twenty-four hours, or until the sediment formed by the alkali subsides entirely, when the supernatant oil is then run off and filtered. The oil thus treated (olive oil) will be found not to tarnish the most delicate brass work, nor will it become thick and glutinous on exposure to the air. Our finest common olive oil will not stand this test, so by a knowledge of this method of refining oil we shall be able to judge of the pure and impure exposed in bottles for sale.

Refining Tallow.

The tallow is melted, but not heated beyond this, when the soda is added of the same strength as in the purifying of oil, and in the same manner kept stirred for some time. It is then heated to 200 for about 15 minutes and allowed to rest for twenty-four hours, or until it is perceived to become slightly opaque in cooling, it is run off into casks, stirring it all the time to prevent granulation. This substance is said to be superb for lubricating pistons of steam engines. Lard, if treated in the same manner as tallow and oil, is rendered more valuable and in every manner better adapted for use and preservation.

Electric Telegraph of Philadelphia.

A severe thunder storm occurred in Philadelphia on the evening of the 13th inst, which fully tested an improvement made to protect the magnets by W. J. D. Reid of the Atlantic and Ohio Telegraph Office. It is thus described.

Over the magnet the helices of which are composed of wires of a size suitable to the intensity of the fluid in storms, is suspended a lever—the fulcrum in the centre, and the extremities resting on pillars of brass. These pillars form the two connections needed; the one with the apparatus of the office by means of a wire leading thereto, and the other connected with a lightning-rod.

By means of adjusting screws at either end of the lever, it is arranged, that while the lever is connected with the pillar leading to the machinery, to which it is secured by means of a spring between it and the fulcrum, it is disconnected with the pillar leading to the lightning-rod, the spring being more powerful than the magnetism produced by the ordinary current. When, however, the strength of atmospheric electricity is such as to endanger the writing apparatus, the magnetic action on the armature of the lever proportionately increases, the spring is overcome, connection with the other pillar is secured, the lightning "shown out of doors;" after which the lever resumes its former position. The action is momentary, and the business may continue without danger or appreciable interruption.

Singular Patent.

Among the notices of recent patents there is one granted to Mr. Allen, of Cincinnati, Ohio, for a method of restoring the fullness or roundness to the cheeks The patentee claims as his invention, the restoring of hollow cheeks to their natural contour and rotundity by means of metalic bulbs, formed, fitted to, and secured in the mouth by a suitable attachment between the jawbones and the cheek.

This is just the kind of patent we wanted when we courted Sally Dobbs, and Philip Kye started opposition. Our nose was mighty long and we wanted more cheek. Philip got her and her dydo foot to boot. All, O. K.

The Square of the Circle.

The faculty of solving mathematical problems is no evidence, singly, of a powerful mind. The calculating negro who is now astonishing our western cousins in Ohio, is an idiot in almost every other respect. In Sir Isaac Newton's time, there was a boy in England who had a greater faculty for the speedy extermination of unknown quantities, than the great philosopher, yet otherwise was as idiotic as the negro to whom we have referred. Yet for all this, who can doubt but the study of mathematical philosophy is one of the greatest importance, very difficult to learn and well denominated *severe*. Mathematical discoveries have conferred untold benefits upon all other sciences, yet there are very few who know what a mathematical discovery means. The majority think that a great knowledge is acquired by a labor like ploughing up a steep hill,—that the student has just to push forward and turn over furrow after furrow until the whole field is ploughed, mastering rule after rule with their dependant problems to be solved. The question is seldom asked, who made the rules, or how are they derived, or upon what basis, correct or false, are they founded? A rule's correctness is easily tested, but how a rule is derived is not so easily answered. Few are aware that a great number of mathematical rules are the result of accident and that their discovery stands on the same platform as discoveries in Mechanics and Chemistry. Thus the discovery of Euclid for finding the area of a circle by the theorem of the triangle, was a most important invention, as it can be applied and is, to many useful calculations. Yet the discovery of this was said to be accidental.

The Quadrature of the Circle, or a rule to find out the exact side of a circle, has long been a desired object, and we have always held it to be possible, as a circle is a polygon of an indefinite number of sides. The discovery has at length been made, at least we have found it so in two calculations. The discoverer is M. Agus. de Bus, a Frenchman, and is founded on the minutia of experimental measurement, that if 0,113,595 be multiplied by the diameter of the circle and the product substracted from the real diameter, the difference of the two quantities, thus obtained, is the side of the square and also the square root of the circle's area.

For example: Multiply 0,113,595 by the diameter of a circle 6, and then subtract the product, which is 0,681,570 from 6,000,000, the result will be 5,318,43, which if multiplied into itself will be 28,285,70, the area of a circle whose diameter is 6. Again, if the diameter is 9, it will operate in the same manner. If 0,113,505 be multiplied by 9 and the product subtracted from its decimals, the result will be 7,977 which if multiplied by itself will give 63,430, the area of the circle. The area of the circle is found by multiplying half the diameter by half the circumference, and the circumference is found by the proportionate number of the diameter, as 7 is to 22, so is the diameter to the circumference. The area can also be found by squaring the diameter and multiplying the square by the decimal 7854. There is another rule more minute still. The latter calculation of 9 diameter is made by inspection, and the minutia calcula may be non infinitissimo, but it will bring the principle to the notice of those who have time to institute the *examen*.

Self-moving Ferry Boats.

On rapid streams where there is no sailing or steamboating, if there is a rope stretched across the river and a boat attached to it with a block and skiver in such a manner as to let the stern swing more clear of the rope than the bow, the current setting against the side of the boat pushes her ahead, across. By this contrivance and a large flat oar dropped on a pivot nearly at right angles with the keel to receive the force of the current, the boat is driven across with considerable speed.

Atmospheric Railway.

Recent numbers of the *Mining Journal* contain descriptions of Clark & Varley's, and other plans, for adapting the pressure of the atmosphere to railway propulsion. The resillient plan will succeed. Samuda's system of atmospheric traction is a failure.

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NEW YORK, JULY 24, 1847.

Hand Loom Weaving.

When we consider how much has been done for the multiplying ot products by improvements in machinery, we are at a loss to know what branch of science and art has been most benefitted, or to know what part of the human race has been benefitted at all. If it is true that within the past sixty years the products of manufacture have been multiplied five hundred fold and the agricultural one hundred, how is it that there is still a very large portion of mankind in those countries most famous for mechanical produce, that are frequently subject to suffering and want. Yea, even the great minds, Fitch, for example. It certainly appears strange, and yet the fault is not in the amount produced, for that surely is a blessing. The evil. however, must be somewhere, and the evil and the remedy for it, should engage the attention of every thinking man. In the invention of the power loom, an evil was experienced by the hand loom weavers with whom it came immediately in contact, and in Great Britain they were reduced to a most deplorable state of suffering on that account. No remedy could be satisfactorily proposed for them only emigration, and that by a committee sent to examine into their condition. This was a sad feature in the prospects of a class of men who were very ill adapted for any other kind of life than weaving, but it was the only feasible one that presented itself for their immediate benefit. But the tables are now turned. If the power loom took away the trade of the hand loom weaver the hand loom is destined again to maintain a respectable standing. A Frenchman by the name of Clausenne has invented a hand loom to be turned by a simple crank, which can weave about five times as much as the old loom and make better cloth, and the tieing of a thread and the turning of the crank seems to be all the apprenticeship required to learn the art. This might seem preposterous and partaking of the marvellous, but the fact is stated upon the authority of J. S. Robertson, Esq. Editor of the London Mechanics Magazine, who turned out a handsome yard of cloth himself and who never had thrown a shot with the fly-pin in his life. This loom would be a most invaluable machine for this country, especially in rural villages, for as food and clothing make up the sum total of our necessary wants, it would at once place a rural operative above the necessity ot depending on much capital, to be independent in manufacturing. It is thought that it will be a great blessing to Ireland and also in regard to the health of the weaver, as it can operate much better in any climate than the old hand loom. We may at some future period recur to this invention and present, after bringing it thus into notice, a more detailed accounts of its operations.

Acquire Information.

The amount of valuable information, on all kinds of subjects, with which many individuals have in their power to store their minds, and which by incidental circumstances may be brought to bear on some useful object, merely by attending to things apparently trifling—by considering no source of information too low, provided it be an honorable one—is altogether astonishing. The time that same people are consuming in indolence, or with a total disregard to the minutiæ of general occupation, others who are aware of the value of knowledge, are assiduously picking it up wherever it may be found, and carefully applying it wherever it is useful. By this means a man becomes impregnable on all points; he is able to say something on all subjects; he obtains the reputation of a man of intelligence, which leads him to offices of ditinction and respectability in the community.

Two fine new ships, the one 747, and the other 600 tons, were launched at Quebec last week.

Etherization.

There is something peculiarly interesting in the history and composition of what has been called the Letheon Vapor, now so extensively known in surgery, and of which so much has been said regarding its effects and so little in relation to its true chemical qualities. "Pneumatic medicine," is the name by which the treatment of diseases by inhaling gas, is known. The first person who greatly distinguished himself in the study of the effects of gases upon the human system was Sir Humphrey Davy, who nearly lost his life when very young by inhaling hydro-carbonate gas for an experiment. The discovery of nitrous oxide, or laughing gas, was made by this great chemist. As early as 1795, it is stated, that Dr. Pearson recommended the inhaling of ether for a number of diseases, and his mode of applying it was to pour one or two spoonsful of sulphuric ether into a saucer holding it to the patient's mouth to be drawn in while breathing.

Sulphuric ether is a subtle fluid volatile, obtained by the distillation of concentrated sulphuric acid on rectified alcohol, and a little alkaline salt should be added to the ether thus obtained, in case that there might be an excess of acid. The strange effects of some gases upon the human frame, have been long known although it has but recently been brought to light that ether is a destroyer of sensation, by Doctor Wells of Hartford, Connecticut, and more extensively made known by Doctors Jackson and Morton, of Boston. It is related in the London Lancet, that more than forty years ago, an old gentleman in that city discovered that the fumes of ether lulled him into forgetfulness of all mental disquietude attending a chequered life. When his mind was disconsolate, he would get an ounce or two of ether and leisurely snuff up the vapor until all unhappy thoughts vanished and he felt—

"O'er all the ills of life victorious."

When interrogated by his friends who witnessed the inhalation, he would answer "soothing sirs, soothing in a remarkable degree."

It seems that the ether is applied in various ways. To children it is applied by laying a cambric handkerchief dipped in ether over the mouth and nose. To grown up persons, by the gas-bag, and let on by a stopper gradually to prevent coughing, which at the commencement of the operation affects disagreeably every patient. In the course of twenty minutes at most, the patient sinks into forgetfulness, his chest blows like a bellows, the pulse sometimes beats rapid, then ceases to be felt, the eyeballs become glassy, fixed and void of speculation, as full evidence that the etherization is complete and the operation may be proceeded with.

Under the influence of ether the most difficult operations have lately been performed, without the recollection of pain by the patient although sometimes abrupt exclamations as of pain, would be uttered, but generally the patient is motionless. The effect of the ether vapor upon the system is soothing in the extreme. Those who take it once are said to have an after predeliction for it, as a tippler for his glass; these things, however curiously some may be affected, are but minor accompaniments of the great tranquilizer, and Providence has now opened up to man a simple manner of alleviating misery and pain in surgical operations, and under circumstances which render it probable that it will never fall into disuse. It is likely to achieve in operative surgery, says Dr. Ingraham, that which surgeons have long sought for in vain.

Government Steamers.

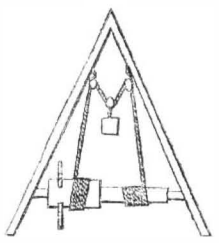
It has been decided by the Navy Department to build one of the new War Steamers at the Brooklyn Navy Yard. All the models, machinery, and other particulars relative to them have also been approved. The other three vessels are to be constructed at Gosport, Philadelphia, and Kittery Navy Yards.

A Dark Picture.

The New York Chief of Police has just made a report to the Mayor, from which there are in that city, 594 houses of prostitution, with 2,673 inmates; 160 police officers; 65 gambling houses; 11 mock auction shops; 215 junk shops, and 115 second hand clothing shops all receivers of stolen goods.

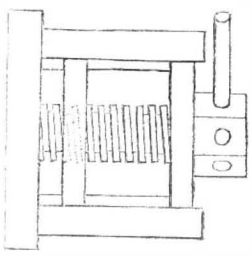
MECHANICAL MOVEMENTS.

Ancient Minehead.



The above cut represents about the simplest form of converting rectilinear motion into circular and vice versa. It will be seen that two degrees of warping power are here combined on the cylinder. The part next the hand or lever is about double the diameter of the opposite part on the other end of the cylinder, therefore it is obvious that it can warp up about double the quantity of rope in the same space of time as the smaller part of the cylinder. This shows merely the effect of different diameters when moving together in the same space of time. Triangle Mineheads of the above description were often, from their great simplicity, used in the old mines, as by having block and tackle on the branks and a windlass underneath, about the width of the bucket from the foot of the triangle, very heavy loads could be drawn from a great depth, as there was an immense lever power brought into requisition. A crank, however, was generally used on the cylinder as it was more simple than the lever.

The Screw.



This is another variation of circular and rectilinear motions, and shews how many ways they can be varied and to how many purposes applied. It is represented here by the lever turning the cylinder or screw, and the handle made so as to shift into the different holes on the head of the cylinder. Now allowing the handle or lever to be perpendicular on the head of the roller, as on a ship's windlass, and then brought down with a sweep to touch the place on which the operator stands, the motion of the stroke, or the pull by the operator's hands is in a straight line while the screw, from the manner in which it is placed, performs at the same time in a circular manner. By the combination of the lever and inclined plane, as in the case of the screw and handle, the most wonderful results have followed, as raising houses of stone and brick from their foundations twenty and thirty feet high without scarcely a brick dislocated, except in their foundations. These things are common in our city, and all by a scientific acquaintance with the power of the lever and screw. and the *grand secret* of *boldness* and *skill* to apply them,

Mistakes of Science.

As an illustration of progress in knowledge, we extract the following item from the American Mechanic's Magazine, for 1825, only twenty-two years ago—this item was copied from the London Mechanics Magazine, and teaches how unwise it may be to rely upon single experiments even of learned men:

Motion of the Electric Fluid.—It has long been received as a fact, that an electrical discharge was capable of being transmitted through a very considerable distance, (say two or three miles,) instantaneously, and without any considerable diminution of its intensity. Mr. Barlow, however, by employing wires of various lengths, up to 840 feet, and measuring the energy of the electrical action by the deflection produced in the magnetic needle, has found that the intensity diminishes very rapidly, and very nearly in the inverse ratio of the distances; hence the idea of constructing electric telegraphs is quite chimerical.

Both white and red chalk have been discovered in the neighborhood of Madison, Wisconsin territory.

Over the Sea Curiosities.

It was said that during the reign of Queen Bess, the people of London would pay far more to see a dead African than a live Englishman. Curiosity is no more controlled by our boasted civilization now than in the days of Elizabeth. Gullibility seems to be part of our nature. Just let some person go into a quiet corner of our city and say there's a bumble bee gone off with a sheep's head, and take our words for it, crowds will soon be out to see the wonder. Well to our *morale*. The Chinese Junk has arrived, and it takes about three shillings to get a sight of the raree show; but no matter, better pay to the Junk than a caoutchouc *dauseuse*. The Chinese are a strange people, but not half so strange as that wonderful fish that can't live on the land, and dies in the water. What have we got here? A painted stick with a dozen arms. Well, that's worth a sixpence. What next? A copper colored, lobster-looking oriental—a descendant of Noah no doubt—so are we.—Well its surely worth something to see a Chinaman, a sixpence. Wonder if his great grandfather was any older than ours? What is to be learned from this Junk? Anything new of the arts and sciences of China? Nothing. All is a scheme of money speculation; a force pump of curiosity.

Albany Agate and Glass Works.

We are happy to learn that this manufactory is, to use a vulgar but pithy expression, *going ahead*. We perceive that they are about to commence manufacturing plate glass. We cannot doubt of their entire success, for we know that they are scientific men who are at the helm. The Albany Agate door knobs, which we have examined and can vouch for their unrivalled beauty, is evidence of the capacity of the manufacturers to make any kind of glass Have not the company found out a more economical method of grinding the knobs yet? The old process appeared to us as crude and expensive.

Smelting Copper Ore.

There are establishments for smelting copper at Boston and at Baltimore. At Boston the smelters have long been extensive refiners and manufacturers of Copper, and they manufacture the product of their smelting works. At Baltimore the ores have been chiefly obtained from Cuba; at Boston, principally from Cuba and Chili. The Swansea (Welsh) method of smelting, with reverberatory furnaces, both for calcination and reduction, has been adopted, but they use equal parts of anthracite and bituminous coal. At Boston, the German method, with calcination in the open air, and reduction in the small upright blast furnace, with anthracite coal alone, is preferred. In Baltimore they have 6 or 8 furnaces in operation, with an experienced manager from Swansea. In Boston the arrangements are on a much more extended scale. Freights from Cuba to Boston or New York are much lower than from Cuba to Wales. It is suggested that the best method for smelting would be, as in England, to carry the ores to the coal. What is the nearest place to the mines on Lake Superior, where there are anthracite coal mines? It is estimated that a ton of anthracite coals will reduce two tons of 20 per cent ore. About $55 are paid per ton, at Boston, for 20 per cent ore; freights from Cuba are over $6, and from Chili $15.

To New Subscribers.

Those subscribing to the Scientific American will be furnished, if desired, with all the back numbers of the present volume. Bound together at the end of the year, they will form a handsome and valuable work.

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Tims' Improvements in the Oiling of the Journals of Railroad Cars.

The following is a description by Mr. Tims of the capacities and benefits of his Oil Chamber, an invention of great importance and, as stated in No. 42 of the Scientific American, by Mr. Blackburn, which saves re-oiling for six months.

"I have the parts made in a workmanlike manner throughout and put them together as they should be. I then fill up the chamber with the oil and see that all is right, and generally see a little to them on the first trip, and then let them run 4000 miles, after which I take the cover off and see that all is right and then draw off the oil from the saving chamber and turn the same into the supply chamber and add some more to it and close up the box, and it then runs another 4000 miles without any further attention. As to the wear of the box I have to say and can be qualified to it, that in running them 50,000 miles they did not wear off the box the thickness of writing paper, consequently this would have a small effect upon wearing the upper edge of the opening for the axle in the leather cap or flange. I had this in contemplation when I planned the box, knowing that to close the end by any arrangement that would require a metal cap or fixture to be near the axle to retain the packing it would be objectionable when the box wore up, as that would bring the axle in contact with it, by which trouble would ensue, I therefore preferred the leather caps to any other arrangement. The objects for which I planned my box were the following: certainty in applying the oil, keeping out the dirt, preventing the circulation of the air in and out of the box to dry up and thicken the oil, and to apply a sufficient quantity at once and control it so that it should run a great distance without renewing the oil, by which a vast amount of attention and expense is saved over the old plans Care must be taken not to fill the box with more oil than is sufficient to fill the supply chamber. I have a few thousand in use to prove my declaration as to their abilities. I warrant them to be capable of running 4000 miles with one application of oil in the box. It may not be amiss to say in this communication, by which I am able to show my claims to a knowledge of the difficulties attending the moving parts of rail roads, that I am practically as well as theoretically acquainted with the minutia of railroads having had some 13 years experience and observation upon them.

JOHN H. TIMS, Patentee."

Mechanical Force of the Cataract of Niagara.

When it is considered that the water power of the cataract of Niagara is unceasing by night as by day, and the power for practical purposes in Great Britain is only applied, on an average, about 11 hours per day during six days of the week, it may be sssumed that the motive power of Niagara Falls is at least forty-fold of the aggregate of all the water and steam power employed in Great Britain, and probably equal to the aggregate of all the motive power employed for mechanical purposes, on this earth. The surface of Lake Erie is found to be 231 feet above the surface of Lake Ontario, and 565 feet above that of the ocean. The descent of the waters of Niagara River, in the few miles of distance between Black Rock and Queenston, is about 171 feet, exclusive of the grand cataract itself, forming a succession of rapids which, in some places, present to view the sublime spectacle of the agitated surface of the ocean in a storm, and these rapids continue to occur during the subsequent descent of the river St. Lawrence, from the level of Lake Ontario to that of the sea, making, in the aggregate, above three-fold of the waterfall of the grand cataract, and consequently one hundred and twenty-fold of all the physical power derived from the use of all the waterfalls and steam engines employed, as above stated, in Great Britain, omitting to take into account the several huge rivers that are tributaries of the St. Lawrence. Such, and on so great a scale, are the ordinary operations of the impulses of physical power employed in the "mechanics of nature" in governing the movements of the waters of a single river, exceeding manifold the portion of physical forces rendered available and employed by all the inhabitants of the earth as a motive-power in the "mechanics of the arts."

We learn from the American Journal of Science and Art the above facts relative to the mighty power of the Niagara River On the American side of the Falls, there are already in operation several mills, such as grist mills and saw mills, and there is room enough to build as many factories as could manufacture for all our continent. Above the bridge the water comes tumbling down for more than a mile like the waves of the ocean. With a good railroad to the Falls, (which we are sorry to say there is not,) from Lockport, two of the greatest water powers in the world might be held in perfect control, as there never would be any fear of back water or lack of water, and in connection with the New York and Erie Railroad, a communication with the seaboard would be open summer and winter.

Supposed Population of the World.

Nine hundred and sixty millions of human beings are supposed to be upon the Earth; of which

Europe is said to contain	153,000,000
Africa	156,000,000
Asia	500,000,000
America	150,000,000

POPULATION OF THE GRAVE.

From extensive calculations it seems the average of human births per second, since the birth of Christ to this time, is about 8-15—which gives about thirty-two thousand millions; and after deducting the present supposed population of the world (960,000,000) leaves the number of thirty-one thousand and forty millions have gone down to the grave giving death and the grave the victory over the living, to the number of thirty thousand and eighty millions.

Of the number in the grave, about
9,000,000,000 have died by War,
7,000,000,000 by Famine and Pestilence,
500,000 by Martyrdom,
589,000 by Intoxicating Drink,
13,000,000,000, Natural or otherwise.

Thus it will be seen that war and strong drink have sent nearly one-third of the human race to a premature grave.

A Vegetable Snake.

A young miss of Cincinnatti while at market early last week, saw in the hands of a German country-woman a *vegetable snake*.

It was mixed up with her vegetables, and was purchased by the person referred to for two cents. The snake is half an inch in diameter at the centre, and tapers to the tail.—The head is on the outer extremity of the plant, and is as perfect a snake's head as if it had grown on a snake! This reptile is in a coil, with the head resting on the body; tongue, mouth eyes, &c., apparent. It is of an orange or yellow color, bright, with all the appearance of a viper. This curiosity grew from the root of an elder bush on a farm in that country. The stem, where the tail of the snake commences, is about the size of a pipe stem, and of the natural consistency and color of the common elder.

An Echo.

There is a singular echo, in the vicinity of Lochcaraon, Scotland, which put a game keeper to a great deal of annoyance lately. It seems he had shet a fox on the opposite side of the glen, and his ear was shortly after saluted with a double report from the echo, at several miles distance. Imagining that the sound proceeded from a poacher's gun he set off at full speed, and in a few hours reached the place quite exhausted. Disappointed and vexed he lay down, and yawning like a grampus, vociferated. 'Hey, how, haoo, haa!'—These interjections were immediately repeated by the echo. The keeper started up in alarm; his dogs commenced to bark; and as their howls were also repeated he fancied that he had fallen upon the den of Cerberus and fled, confounded, from the spot.

General Taylor's Portrait.

Mr. Atwood, the artist, who was sent on from Philadelphia to take a portrait of Gen. Taylor, has returned. His picture is said to be an excellent likeness.

Wives of Working Men.

Speaking of the middle ranks of life, a good writer observes:—There we behold a woman in all her glory; not a doll to carry silks and jewels, not a puppet to be dandled by fops, an idol of profane adoration, reverenced to-day, discarded to-morrow; admired, but not respected; desired, but not esteemed; ruling by passion, not affection; imparting her weakness, not her constancy, to the sex which she should exalt; the source and mirror of vanity; we saw her as a wife, partaking the cares and guiding the labors of her husband, and by her domestic diligence spreading cheerfulness around her; for his sake sharing the decent refinements of the world without being vain of them: placing all her joy, all her happiness in the merited approbation of the man she loves.—As a mother, we find her the affectionate, the ardent instructress of the children she has tended from their infancy; training them up to thought and virtue, to meditation and benevolence: addressing them as rational beings, and preparing them to become men and women in their turn. Mechanics' daughters should make the best wives in the world. And no doubt would, but for the mean and anti-republican odor that is now given to labor Neither man nor woman that despises labor ought to live in our commonwealth.

One in a Thousand.

A young man named John Armour, an apprenticed clerk in the city of Edinburgh, Scotland, was lately called upon to give evidence, along with other clerks, in a case of fraud. Twelve witnesses came forward and took the usual oath; the thirteenth was Armour, whose testimony was most valuable, as he alone could identify the prisoner. When the oath was tendered to him, in a calm, clear voice, he refused to take it. The sheriff demanded his reason. He replied, "Because I cannot disobey Christ." "Where did you read that?" "Swear not at all," was the clear reply. The sheriff remarked, "You are too young to hold such opinions, in opposition to so many good men. When did you first entertain them?" "When I began to think for myself," said the noble youth. After being taunted with questions and remarks, and sneeringly told that his "sentiments savored more of conceit than conscience," after he had been removed three times and taken back, to see if he would change, and had stated that he was neither a Friend, a Moravian, nor a Seperatist, the prisoner was liberated for want of his evidence, which could not be received without an oath, and the conscientious boy was himself sentenced to one month's imprisonment, and refused permission to see his parents for two weeks. It is feared that when his term of imprisonment expires he will not be again received into the bank as clerk; his prospects for life, unless his friends interpose, may be ruined, and himself classed with criminals, for obeying his conscience. The Society of Friends have petitioned the Queen, and strenuous legislative efforts will be made to extend to all having conscientious scruples against taking an oath the same privilege now granted to the Society of Friends.

Height of Water in the Lakes.

The water in the upper Lakes is a foot lower than it was last year, and nearly three feet lower than it was five years ago. This with the accumulation of sand at the mouth of our harbors renders them much less easy of access than they have often been for some years. On the other hand the water of Lake Ontario is continually growing higher. This fluctuation is constantly going on, the highest variation being about ten feet. The water has been known to rise eighteen inches in one year at the mouth of the Genessee, but this was unprecedented. This rise and fall of water has been much speculated upon, and is as much a matter of wonder as the continual rise of land in Norway and Sweden, which has risen 1800 feet the last 1200 years.

The Teeth.

A French savan has discovered and read a paper before the Academy to prove that the tartar which covers the human teeth is formed of the mountains of the dead of millions of infusoriæ, that have lived in the mucous secretions of the mouth.

Cleaning Harness.

There should be two pairs of girths in use with the saddle, when the horse has much work to do, to allow each pair to be thoroughly cleaned and dried before being again used. The best way to clean girths is first to scrape off the mud with a knife, and then to wash them in *cold* water, and hang them up so as to dry *quickly*. *Warm* water makes them shrink rapidly, and so does long exposure to wet. If there is time, they should be washed in the same day they have been dirtied; but if not, on being scraped at night, they should be washed in the following morning, and hung up in the air to dry, and if the air is damp, let them be hung before the kitchen fire. Girths allowed to dry with the mud on soon become rotton and unsafe.—The stirrup leathers should be taken off and sponged clean of mud, and dried with a cloth. The stirrup-irons and bit should be first washed in water, and then rubbed dry with a cloth immediately after being used. *Fine* sand and water, on a thick woolen rag, clean these irons well, and a dry rub afterwards with a cloth makes them bright. Some smear them with oil on setting them past to prevent rust, but oil, on evaporation, leaves a resinous residuum to which dust readily adheres, and is not easily taken off afterward. The curb-chain is best cleaned by washing in clean water, and then rubbed dry and bright by friction between the palms of both hands. The saddle-flaps should be sponged clean of mud, and the seat sponged with a wrung sponge, and rubbed dry with a cloth. Carriage harness should be sponged clean of mud, kept soft and pliable with fine oil, and, when not japanned, blackened with the best shoe black. There should be no plating or brass on a farmer's harness; plain iron jappaned, or iron covered with leather, forming the neatest, most easily kept, and serviceable mounting. Bright metalic mountings of every kind soon assume the garb of the shabby genteel in the hands of an ordinary rustic groom.

Steam Navigation in South America.

The National Congress of the Republic of Venezuela, South America, having granted to Mr. Vespasian Ellis, a citizen of the United States, and to such persons as may become associated with him, the exclusive right of navigating the rivers Orinoco and Apure by steam, for the term of eighteen years, that gentleman, we perceive, is soliciting the attention of men of capital to the subject, and inviting them to co-operate with him in carrying out the enterprise.

The valley of the Orinoco is, in many respects, like the valley of the Mississippi in our own country. It covers an area of four hundred thousand square miles of land, yielding the richest products of the earth, such as cocoa, coffee, indigo, tobacco, sugar, horses, Brazilwood, &c &c., and is watered by a hundred streams, many of which are navigable. The climate is temperate and salubrious. The Orinoco is navigable for four hundred leagues, and its principal branches, the Guaviare, Meta, Caroni, and Apure, are likewise navigable. The total amount of exports from the valley of the Orinoco, in one year, was two millions of dollars; a vast amount, when we consider that a great proportion of the produce of the country is carried to the seaboard, hundreds of miles, and across mountains and valleys, by means of mules.

Notwithstanding the want of steam communication on the Orinoco and its tributaries, the trade of the country is increasing at a surprising rate In 1832, the exports from Angostura were about, $152,000, while in 1844 they were upwards of $600,000 and the exports for the first quarter of the present year amounted to $400,000. The ratio of increase will no doubt be quadrupled every year from the time that Mr. Ellis will have his steam vessels navigating those rivers; for besides the regular trade, a large additional trade can be carried on with New-Grenada, the Orinoco being navigable for steamboats to a point within one hundred and twenty miles of Bogota, the capital.

One of the most dashing young ladies of Princeton, N. J., has lately been sued for slander, by a gentleman of the same town, a novel trial is expected.

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TO CORRESPONDENTS.

"E. W. of Mass."—You must be more explicit. By your former letter no person could have understood that you wished to know the relative forces of the crank and wheel—If the crank and wheel are of equal diameters and weight and impelled by the same continual force, they are both equal. It is in the manner in which they are applied, that the relative superiority of each can be known.—This you have not communicated, but for a parallel engine the motion of the piston is best accommodated by the angular form of the crank and there is a saving of 16 2-3 per cent of power. If you mean to gear your engine without the common side lever, or walking-beam, by a wheel, this application is not new, as we have seen a small engine of four horse power constructed in this manner fifteen years ago, by a Mr. Rutherford, we believe, from Lanarkshire, England.

"A. S. of Michigan."—The only way of softening the silver for working, with which we are acquainted, is to boil it in sulphuric acid. There is no work on Watchmaking published here. Machinery can be propelled by contraction and expansion, but it will never be of any benefit in our opinion, for practical purposes.

"L. A. F. of Mass."—You can file a caveat and go on and make experiments without publishing them, but you surely cannot by that means secure any right to an invention, unless you state the principle of it, for how is it possible to tell what the discovery may be unless it is made known.

"L. B. of N. Y."—The art of flying is what we would rather see demonstrated than commented upon, as the demonstration of science not its speculations, are the articles which we select and publish.

"G. W. S. G. of Ohio."—All the information which you require about a planeing machine, can be obtained by communicating with John Gibson, Esq. Albany, N. Y.

"M. M. of Michigan."—Your drawing of the Water Lamp is incorrect The tube instead of being conducted from the top of the lamp to the bottom, should be carried up above the the opening. The platina has to be heated to an intence degree before it will perform its decomposing functions. We hope that you will give this subject much attention, as it is of great importance and but little has been done towards bringing it into practical use. We hope you will communicate again on this topic and state definitely your propositions.

"V. H. H. of N. Y."—The best mode of decomposing water is by the galvanic battery. This is true, making every other allowance. But for no profitable purpose has the experiment yet been made. We cannot tell the exact quantity, but it all depends on the power of the battery. The gas produced by the decomposition of water, has cost more than the most expensive wax or sperm tapers for light.

"T. D of S."—We shall examine your Boiler Feeder, and give you the desired information soon.

"E. G. of Mass."—We received your communication and will give it due attention.

"N. W. C. of Mass."—We shall call attention to your experiment.

"A. W. of N. J."—We have not been able to obtain correctly the information you desire. We shall endeavor to do so as soon as possible

"R. H. E. of N. Y."—Your ideas regarding air tight boxes for steamboat paddles would be of no use to ocean steamers, as it is not possible for them to have a regularity of dip and beside you will perceive that on smooth water unless the boxes have compressed air of power enough to sustain the vessel at a continual dip independent of cargo, they would be of no use. There will also be a great difficulty in making a box, or air chamber of any use into which a wheel would play with its arcs communicating continually with another element.

"S. W. F. of Conn."—You cannot get out a patent for the cast iron knobs, or those made of clay. Both metalic and clay knobs have already been made, though not in use. We have seen them both, but not spool stands.

"A. J. P. of C. W."—Your telegraph knob is certainly very superior to those now in use. We think that if made wholly of glass they would be less expensive and answer as good a purpose as if made of iron. We would not, however, advise you to get a patent.

"W. B. of Mass."—To compress air there must be a vast amount of friction; as it is a compound gas composed of particles of infinite minuteness, therefore we mean by friction both velocity and compression combined. Your proposition "if heat will not compress in the ratio of the compression of gasses, neither will it expand," assumes it to be a determined fact that heat in itself is matter. This question has not been fully settled, it has still some obstacles to clear away. Heat is an effect of some kind of action, and merely so, like sound. The mere expansion and contraction, is no evident data for heat and cold. The greater the degree of cold, water becomes more expanded to a certain point, and alumina contracts in proportion to the degree of heat to which it may be submitted. The object to which your mind is directed is of great importance, and it is not reduced yet to a science, therefore it can be but little known to either of us yet. Your experiments may be the means of classifying facts.

"B. B. of Va."—We are glad to hear of your safe arrival at Wheeling. You shall hear from us soon.

"A. J. P. of C. W."—It is impossible for us to furnish you with a complete set of volume 1, but can furnish you with the last half, as per notice in this column below.

"E. B. of N. Y."—We forwarded an Electric Machine to your address by Livingston and Wells express, on Tuesday last.

Mechanics Mutual Protections.

No. 5 meets on Tuesday evening corner of Avenue A and 2d street.

No. 11 meets on Tuesday evening, corner of Cottage place and Bleecker street.

No. 18 meets on Tuesday evening, corner of Hudson and Grove streets.

No. 12 meets on Monday evening, 16th st., between 7th and 8th Avenues.

No. 19 meets on Monday evening, corner of Cottage place and Bleecker street.

No. 37 meets on Monday evening, corner of Broadway and Lispenard street.

No. 28 meets on Wednesday evening, at 111 Bowery.

No. 39 meets on Thursday evenin corner of Avenue C and 3d street.

No. 41 meets on Friday evening in Excelsior Hall, Allen street.

No. 7, Brooklyn, meets on Monday evening, in Fulton street, opposite City Hall.

The officers of Brooklyn Protection are :—Wm. W. Whitehill, Senior Protector; Wm. Cornell, Junior Protector; Wm. Hatfield, Recording Scribe; Abraham Collins, Financial Scribe; W. F. Ressecgue, Treasurer.

The names of all the officers in the city have not yet been handed in.

Protection No. 41 was instituted on Monday evening last, by District Protector Ira A. Campbell, and it promises to be useful in spreading knowledge and promoting good will.

Information regarding the Mutual Protection, its objects and aims, can be had by enquiring of James S. Huyler, Deputy Grand Protector, residence corner of Bleecker and Downing streets, N. Y.; Ira A. Campbell, D. P, No. 80 James street; James McDonald, D. P. 48 Elizabeth street, and J. A. Heath, D. P.

JAMES S. HUYLER, D. G. P.

July 20th, 1847.

FIRST VOLUME

We would inform those who have been disappointed in procuring the whole of the first volume of the SCIENTIFIC AMERICAN, that we have recently come into possession of a few complete sets of the last half (*i. e.* from Nos. 26 to 52 inclusive) which we will dispose of at the subscription price, viz. $1 per set.

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☞Pictures taken at this establishment warranted to give satisfaction. j24

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☞ This paper circulates in every State in the Union, and is seen principally by mechanics and manufacturers. Hence it may be considered the best medium of advertising, for those who import or manufacture machinery, mechanics tools, or such wares and materials as are generally used by those classes. The few advertisements in this paper are regarded with much more attention than those in closely printed dailies.

Advertisements are inserted in this paper at the ollowing rates :

One square, of eight lines	one insertion,	$ 0 50
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" " " "	three do.,	1 00
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" " " "	six do.,	7 50
" " " "	twelve do.,	15 00

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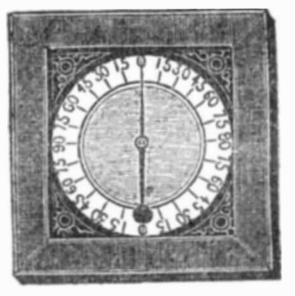

THE UTILITY of this invention so far exceeds the expectation of the inventor that he has been induced to engage in the manufacture of them to a large extent. It is understood from the engraving, that the proper position of the instrument is vertical, and that the weight of the ball will keep the index in a perpendicular position, so that either the bottom or side of the frame being placed against a horizontal, vertical or oblique surface, the index will show its inclination, (if there be any) in degrees.

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Gutta Percha.

The most successful manufacturer of this substance is a Mr. Brooman, in England.—He has taken out three patents for applying it in different ways. He makes it into threads of a remarkable fineness and also into different kinds of goods, such as ribbons, paper, &c., using the bobbin and fly-frame for twisting and spinning as in cotton manufacture, and it is somewhat singular that the whirling and twisting is a means of making the threads more elastic. These threads can be combined with either silk, cotton or wool. A perfectly water-proof fabric is made by laying a number of gutta percha threads side by side upon a cotton ground or woolen, and then passing the fabric through heated rollers. The gutta percha can also be made into hats, caps and baskets, by braiding the threads; also into the making of paper almost impossible to tear, and therefore excellent for bank bills and bills of exchange, by simply combining some of the paper pulp with the solvent percha. It is also used for book binding, for cementing at the backs sheets of books and pamphlets before they are boarded, instead of sewing and glueing in the usual way. It is used also for coloring and marbling edges and covers, portfolios and writing cases, and sometimes as a substitute for vellum leather, by having it embossed in the most beautiful and simple manner. For book binding it is said to be invaluable for speed and economy. It is used also for rendering boots and shoes waterproof and more durable, and also by making gaiters, boots and shoes, without any stitching at all, by casing the prepared gutta percha in moulds. This substance has also been found to be of great value in the manufacture of tubes, syringes, bottles, &c., and it is recommended highly in dentistry.

It will be observed by those who have read the account we have given of this strange substance, in this and the two preceding numbers of this paper, that it must soon become an article of general use in this country, as it is now in England. No patent, so far as is known to us, has been taken out in the United States for its preparation or manufacture. It is well known that Mr Goodyear manufactures gum elastic or india rubber into nearly as many different articles and applies it in nearly as many different ways, but the gutta percha is said to be far superior to caoutchouc for universal application. As an article of general utility it cannot long escape the predilections of us Yankee people for appropriation, as we are a nation (uncle John knows) of utilitarians.

Aventurine Glass.

This costly and beautiful sort of glass, used for ornamenting objects of art and *vertu*, could not be hitherto made but at Venice. Only so much was known, that very minute crystals of metallic copper of great lustre, which mixed throughout the mass of dark reddish-yellow glass, imparted to this substance that lustrous and incandescent appearance for which it was so much prized. Messrs. Fremy and Calendau have lately laid before the French Institute their process for making this valuable substance. It consists of mixing powdered glass with hammershlag (black oxide of iron, or scales from the forge) and oxide of copper, and keeping the whole for a considerable time in a state of fusion. By these means the copper crystallizes in the glowing mass of glass in the shape of small octahedra, which being dispersed through the mass, imparts to it a beautiful scintillating appearance. Still, the original Venetian samples, and those made by Messrs. Fremy and Calendeau, were not of equal quality—the mass of glass, wherein the crystals are embedded being, in the former case, clear and pellucid; in the latter, rather soiled, and barely transparent. The crystals in the Venetian are large and very regular; in the French small, irregular, and fibrous. The principle, however, is discovered; and it will only require, as with every thing else, time and experience to equal the Venetian patterns.

Golden Glass.

The following remarks regarding the making of colored glass, are worthy of attention, inasmuch as its manufacture is daily becoming of more importance to American glars manufacturers.

Not long after the time when the art of making the copper-red glass was lost, Kunkel appears to have discovered that gold melted with flint glass was capable of imparting to it a beautiful ruby color. As he derived much profit from the inventlon, he kept his method secret, and his successors have done the same to the present day. The art, however, has been practiced ever since for the purpose of imitating precious stones, &c., and the glass used to be sold at Birmingham, England, for a high price, under the name of Jew's Glass.—The rose colored scent bottles, &c., now commonly made, are composed of plain glass, flashed or coated with a very thin layer of the glass in question. Numerous experiments have been made on this subject, and have been successful in producing glass of a fine crimson color. One cause why so many persons have failed in the same attempt,* is suspected to be in the fact that they have used too large a proportion of gold; for it is certain, that an additional quantity of gold beyond a known point, so far from deepening the color, actually destroys it altogether. Another cause probably is, that they have not employed a sufficient degree of heat in the fusion. It has been found that a degree of heat, judged sufficient to melt cast iron, is not strong enough to injure the color. It would appear that in order to receive the color, it is necessary that the glass should either contain a proporti n of lead, or of some other metallic flux. Bismuth, zinc and antimony have been found to answer the purpose, but it has been attempted iu vain to impart any tinge of this color to crown-glass alone.

Glass containing gold exhibits the same singular change of color on being exposed to a gentle heat. The former when taken from the crucible is generally of a pale rose-color, but sometimes colorless as water, and does not assume its ruby color till it has been exposed to a low red heat, either under a muffle or in the lamp. Great care must be taken in this operation, for a slight excess of fire destroys the color, leaving the glass of a dingy brown, with a blue transparency like that of gold leaf. These changes of color have been vaguely attributed to change of oxygenation in the gold; but it is obviously impossible that mere exposure to a gentle heat can effect any chemical change in the interior of a solid mass of glass, which has already undergone a heat far more intense In fact, it is found that metallic gold gives the red color as well as the oxide, and it appears scarcely to admit of a doubt, that in a metal so easily reduced, the whole of the oxygen must be expelled long before the glass has reached the melting point. It has long been known that silver yields its color to glass while in the metallic state, and everything leads one to suppose the case is the same as to gold.

There is still one other substance by means of which it is possible to give a red color to glass, and that is a compound of tin, chromic acid, and lime; but the trials do not lead us to suppose that glass thus colored, will ever be brought into use.

*Dr Lewis states that he once produced a potful of glass of beautiful color, yet was never able to succeed a second time, though he took infinite pains, and tried a multitude of experiments with that view.

Buckwheat for Coloring.

The fresh blossoms and succulent stems of buckwheat have been appplied in Europe to the purpose of dying wool, &c. The infusion by the addition of preperations of bismuth and tin, prodced a beautiful brown color. From the dried flower bundles, different shades of green are obtained. The Siberian species of wheat, in particular, yield a fine yellow, which upon boiling the wool still longer in the dye changes into a golden tint, and at length becomes a beautiful yellow.

The best yellow, however, is made by boiling quercitron bark—yellow oak bark—with a small portion of sulpha muriate of tin.

The debts of all the States in the Union amount to $224,023,827.

THE ART OF PAINTING.

(*Continued from No.* 43.)

LANDSCAPE PAINTING ON WALLS OF ROOMS.

In applying the foliage or leaves to the trees of the first distance, especially to the oaks and hickories, a peculiar brush is required, consisting of a large sized new paint brush of the fine soft kind, wound or bound with twine nearly half the length of the bristles, so that the extreme point may be reduced in size and may be a little flattened by applying opposite sides alternately to the work; this brush however, improves by being worn. With this brush, and by a little practice, a learner may soon be able to produce, by rapid sleight, representations of clusters of foliage similar, but on a large scale, to those represented in figures B and C, in the cut. The application of colors in forming the tops of trees, is technically termed *bushing* the trees, &c. The foliage of elms is more conveniently formed by a very large brush already half worn; as the paint requires to be more extensively distributed in a multitude of small detached spots of various figures. The first color used for this work is dark green, composed of chrome green and blue-black; and this is applied to the sides opposite the light, and across the bottom of the cluster of the trees. The next, and main color, is chrome green, or forest green, and with this color the whole principal form of the tree is produced. These colors should be diluted with water so as to work very free and flowing; and each color must be allowed to dry before the next is applied.—The foliage of oaks and most other trees, is heightened with light yellow green (lemon yellow a little changed with forest green,) which is applied to the fronts of the clusters or prominent parts, but principally towards the light. It is common, however, in painting maples, to apply the green but slightly, and finish with vermillion, slightly heightening the horizon red; and in representing old oaks, a mixture of green with venitian red is used, and yellow ochre for heightening.—Hickory trees, and young thrifty ash, are heightened with Paris green; and this green may also be used discretionary on other trees. The next business in the process is to paint the houses and vessels in the 2d, 3d and 4th distances; also the fields, fences, trees, orchards, and forests; but as these divisions will require several illustrations, we shall defer them to next number.

(*To be continued.*)

Solution of Silk.

A simple piece of worn out silk is in ordinary usage, worth nothing, whilst the same in cotton and linen cloth, has for a considerable time been available for various purposes. Through the researches of Prof. Debzenne, of Paris, the most useless portions of silk can now be transformed into new silks again, to serve for different articles. In the same way that caoutchouc is drawn into filaments, and woven into a durable material, so are these remnants of silk reduced to what is no more than its primitive state, viz: a glutinous paste, by means of a solvent; and like fused glass re-acquires on coming into the air, all its tenacity and strength. The crude silk and that which is not dyed, is easily managed. The inventor at present has found it difficult, however, to recover the dyed portions of silk, and more especially the black silks; but he hopes by continuing his close attention to the subject to overcome this difficulty.

New Stone.

At a late sitting of the Imperial Academy of Sciences of Helingsfors, the State Councillor Nordenskjold, one of the members of this association, presented to it a new kind of stone, which he had discovered not far from the gold washing establishments in the environs of Nejnei-Taghilsk (Russia,) and which exactly resembles a diamond, except that its specific weight is a little smaller. M. Nordenskjold has given this mineral the name of diamontoide, and the Academy have appointed a committee to analyze it.

Drugged Liquors.

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